

METHOD AND SYSTEM FOR RESOURCE MANAGEMENT WITH INDEPENDENT
REAL-TIME APPLICATIONS ON A COMMON SET OF MACHINES

Abstract of the Disclosure

A resource management mechanism is provided to ensure that real-time application programs running on a single machine or set of machines exhibit predictable behavior. The resource management mechanism employs the abstraction of an activity which serves as the basis for granting resource reservations and for accounting. An activity submits a request for resources in specified amounts to a resource planner. The activity is resource self-aware so that it is aware of its resource requirements. The activity may query resource providers to obtain resource requirements for particular operations. The resource planner determines whether the activity should be granted the requested reservation by employing an internal policy. Policy is separated by mechanism so that the resource planner may implement any of a number of policies. The resource planner may choose to grant the reservation to an activity or deny the request by an activity. When denying a request, the resource planner may inform the activity of what quantity of the requested resources are currently available so that the activity may submit a modified request. The resource management mechanism includes a dynamic feedback mechanism for initiating renegotiation of resource reservations when appropriate.